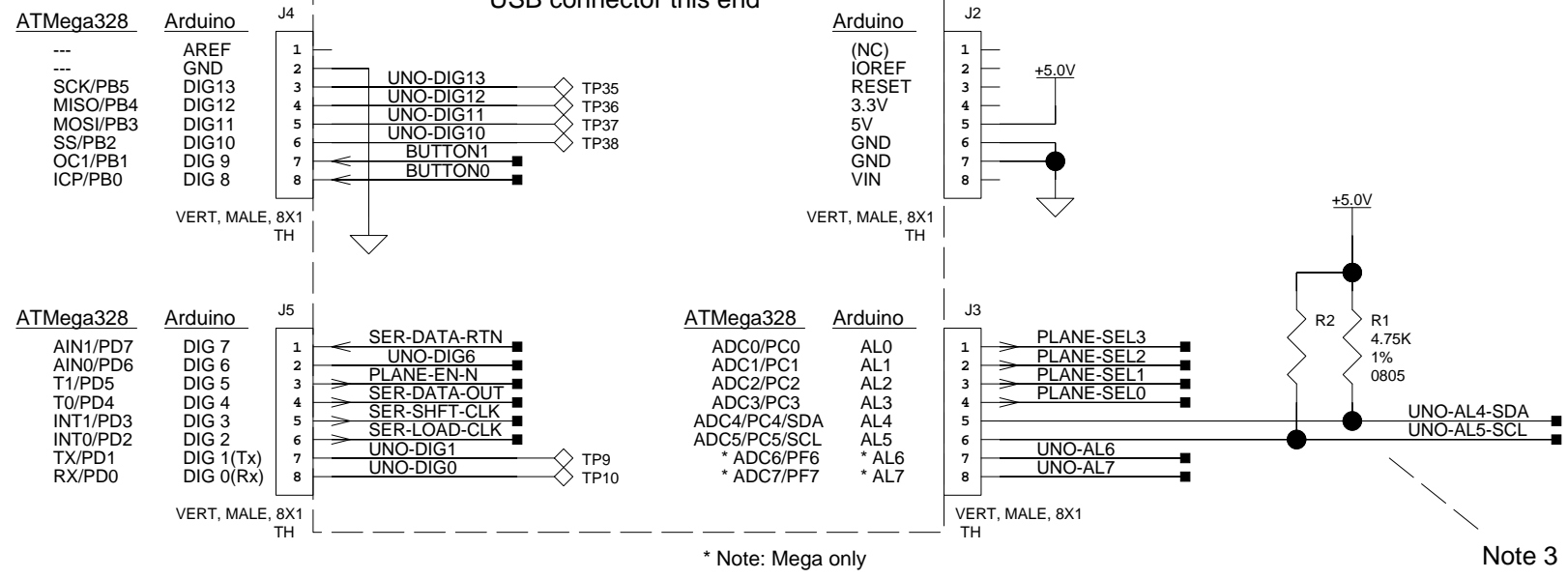



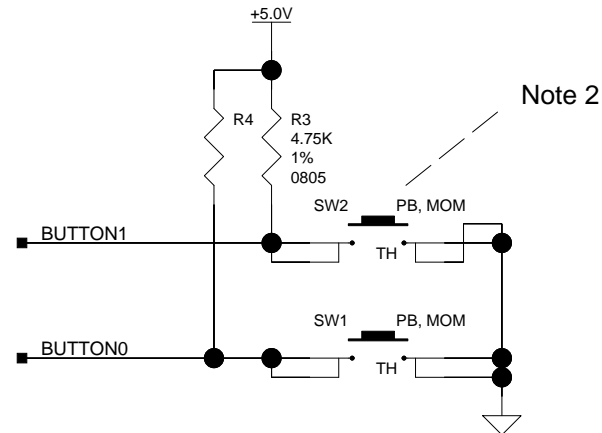
Arduino Mount Headers

UNO or Mega
Component side down
USB connector this end



NOTES

- This design is not Copyrighted and is licensed based on Open Source Hardware Definition 1.0 (OSHW), allowing for free use, redistribution, and modification. (<http://www.oshwa.org/definition/>)
- No guarantee is made or implied as to the correctness or safety of this design; Its use is strictly the responsibility of the end user.
- The symbol  denotes components which are (typically) not populated. This may be due to the device being a design contingency, or used on a tile not associated with the typical 8x8x8 configuration



Arduino support

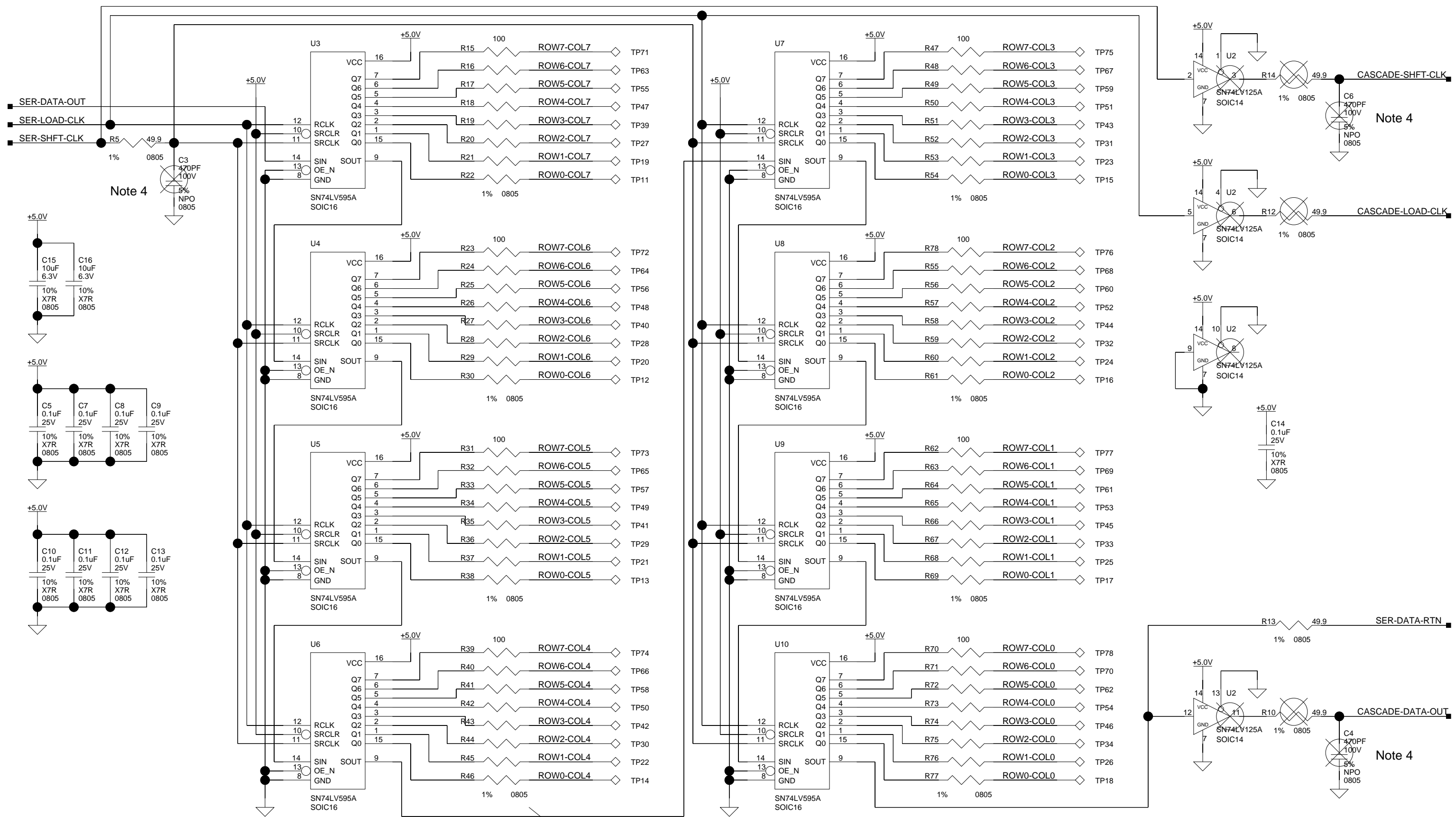
TITLE		<h1>8x8x8 LED Cube</h1>	
SIZE	DWG NO		
B			
SCALE	SHEET	1	of 4

4

3

2

1



Note 4

Note 4

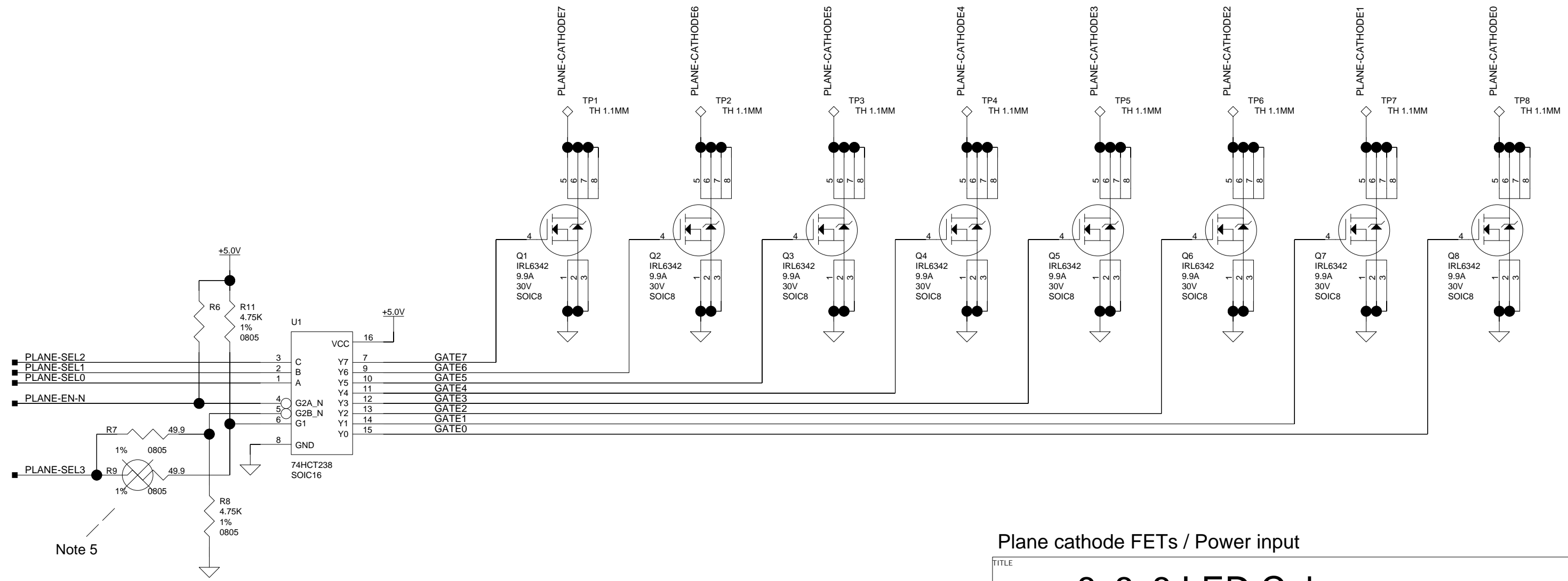
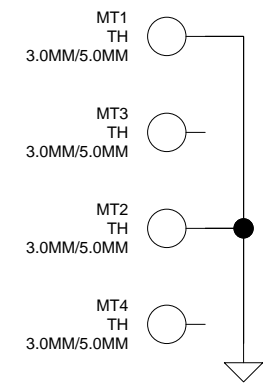
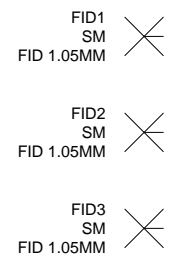
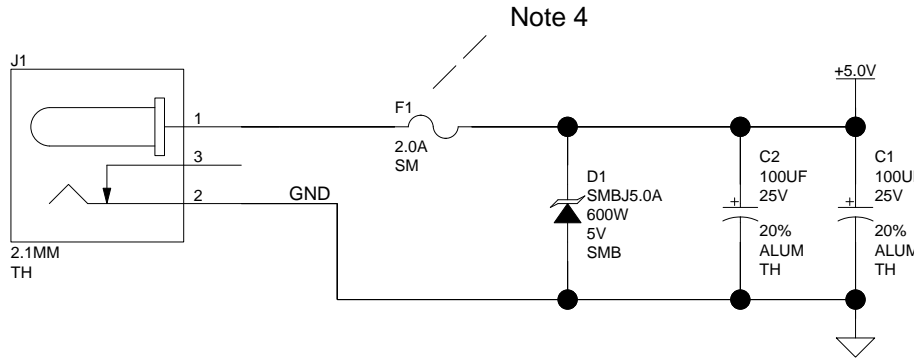
Note 4

Note 1

Shift registers/LED anode drivers

8x8x8 LED Cube

TITLE		8x8x8 LED Cube	
SIZE	DWG NO		
B			
SCALE	SHEET	2	of 4



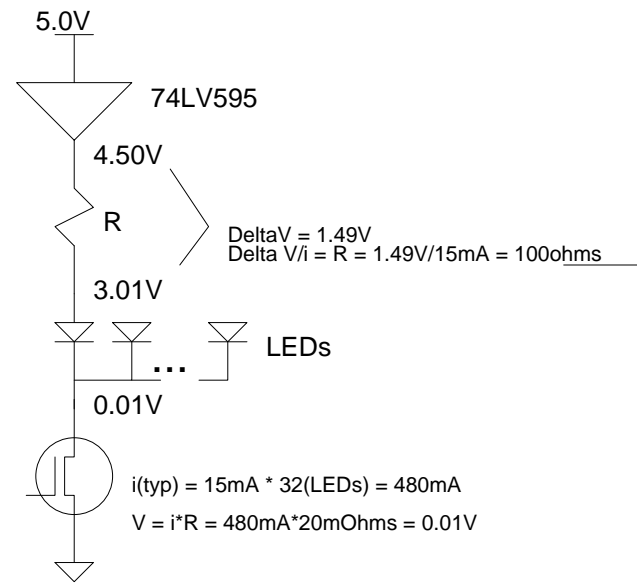
Note 5

Plane cathode FETs / Power input

TITLE		8x8x8 LED Cube	
SIZE	DWG NO		
B			
SCALE	SHEET	3	of 4

Notes:

- 1: LED current limit resistor calculation ...
Forward drop across LED (Vf) approx 3.0V (this will vary with LED color and mfg)
74LV595 output 700mV(max) below VCC at 16mA ... 4.3V@VCC=5.0V. Recommended max Iout is 16mA.
Cathode FET on resistance approx 20mOhms (Vgs@4.5V)
Assume ...
 - Desired current (i) is 15mA (each LED)
 - Typical for 'LV595 output drop is 500mV
- 2: Push buttons are uncommitted functions (i.e. firmware defined)
- 3: Fast edge transitions in digital logic may cause poor signal quality and unexpected behavior due to non-monotonic clock edges and signal reflections. Capacitors for R/C termination are contingency and generally are not required.
- 4: Increase fuse appropriately for tiled configuration (approx 15mA (times) LEDs per plane (plus) 200-300mA)
- 5: R7 and R9 mutually exclusive. Populate R7 on first tile (planes 0 through 7) and R9 on 2nd tile (Planes 8 through 15)



Notes

TITLE	
8x8x8 LED Cube	
SIZE	DWG NO
B	
SCALE	SHEET 4 of 4